

AMENDMENT(S) TO THE CLAIMS

1. (Currently Amended) An ink-jet printer, comprising:

a carriage configured for receiving and supporting ~~at least one ink-jet pen~~ a pair of ink jet pens in side-by-side relation ;

driver electronics for the ink-jet ~~pen pens~~; and

means for providing electrical connection between the ~~pen pens~~ and the driver electronics once the ~~pen has pens have~~ been fully inserted into the carriage including a flex cable in the carriage having ~~at least one extended portion~~ a pair of extended portions on opposite sides thereof for ~~each~~ contacting ~~the pen~~ a corresponding one of the pens during insertion into the carriage and shunting electrostatic discharge (ESD) from the ~~pen pens~~ to ground before full insertion of the ~~pen pens~~.

2. (Canceled)

3. (Currently Amended) The printer of Claim 1 wherein the extended ~~portion is~~ portions are constructed and configured so that the extended ~~portion~~ portions initially ~~remains~~ remain in a predetermined free floating intercept orientation and will thereafter fold to a retracted orientation as the ~~pen is~~ pens are progressively inserted into the carriage.

4. (Currently Amended) The printer of ~~Claim 1~~ Claim 3 wherein the extended ~~portion is~~ portions are constructed and configured so that upon removal of the pen from the carriage the extended ~~portion~~ portions will spring back to the predetermined intercept orientation.

5. (Currently Amended) The printer of Claim 1 wherein the extended ~~portion has~~ portions have a conductive trace with a portion exposed and positioned for contacting the corresponding pen when the ~~pen is~~ pens are inserted into the housing carriage .

6. (Original) The printer of Claim 5 wherein the exposed portion of the trace is plated with a metal to ensure shunting of the ESD.

7. (Currently Amended) The printer of Claim 1 wherein the extended ~~portion is~~
2 portions are configured as a generally C-shaped loop with an open region that surrounds a
plurality of conductive dimples on the flex cable.

8. (Currently Amended) The printer of Claim 1 wherein the extended ~~portion is~~
2 portions are each secured to a corresponding sidewall of the carriage and ~~has~~ have an exposed
conductive pad that makes electrical contact with the corresponding pen upon insertion of the
4 pen into the carriage.

9. (Original) The printer of Claim 1 wherein the driver electronics are provided
2 by a printed circuit assembly (PCA) selected from the group consisting of a carriage PCA and
a main PCA.

10. (Original) The printer of Claim 1 wherein the flex cable is made of a plastic
2 film substrate with conductive traces formed thereon.

11. (Currently Amended) A printer, comprising:
4 a carriage for removably receiving and supporting ~~at least one pen~~ a pair of pens in
side-by-side relation;
6 driver electronics for the ~~pen~~ pens; and
a flex cable that provides electrical connection between the ~~pen~~ pens and the driver
8 electronics once the ~~pen has~~ pens have been operatively mounted in the carriage, the flex
cable having ~~at least one extended portion for contacting the pen~~ a pair of extended portions
10 on opposite sides thereof for each contacting a corresponding one of the pens during insertion
~~of the pen~~ into the carriage and shunting electrostatic discharge (ESD) from the ~~pen~~ pens to
12 ground before the ~~pen is~~ pens are operatively mounted in the carriage.

12. (Canceled)

13. (Currently Amended) The printer of Claim 11 wherein the extended ~~portion~~
2 is portions are constructed and configured so that the extended ~~portion~~ portions initially

remains remain in a predetermined free floating intercept orientation and will thereafter fold to a retracted orientation as the ~~pen is~~ pens are progressively inserted into the carriage.

14. (Currently Amended) The printer of Claim 11 wherein the extended ~~portion~~ is portions are constructed and configured so that upon removal of the ~~pen~~ pens from the carriage the extended portion will spring back to the predetermined intercept orientation.

15. (Currently Amended) The printer of Claim 11 wherein the extended ~~portion~~ has portions have a conductive trace with a portion exposed and positioned for contacting the corresponding pen when the ~~pen is~~ pens are inserted into the ~~housing~~ carriage.

16. (Original) The printer of Claim 15 wherein the exposed portion of the trace is plated with a metal to ensure shunting of the ESD.

17. (Currently Amended) The printer of Claim 11 wherein the extended ~~portion~~ is portions are configured as a generally C-shaped loop with an open region that surrounds a plurality of conductive dimples on the flex cable.

18. (Currently Amended) The printer of Claim 11 wherein the extended ~~portion~~ is portions are each secured to a corresponding sidewall of the carriage and ~~has~~ have an exposed conductive pad that makes electrical contact with the corresponding pen upon insertion of the ~~pen~~ pens into the carriage.

19. (Original) The printer of Claim 11 wherein the driver electronics are carried fsby the carriage.

20. (Currently Amended) An ink-jet printer, comprising:
a frame;
a carriage configured to removably receive and support at least one pen;
means for supporting and laterally reciprocating the carriage on the frame;
driver electronics for the pen;
means for propelling a sheet of media longitudinally past the pen; and

8 a flex cable mounted in the carriage for providing an electrical connection between
the driver electronics and the pen when the pen is fully inserted into the carriage and including
at least one extended portion having a conductive trace with an exposed portion that contacts
10 ~~that intercepts~~ the pen during an initial phase of insertion into the carriage to shunt
electrostatic discharge (ESD) from the pen to ground before the extended portion folds to
12 allow the pen to be fully inserted into the carriage.

21. (New) An ink-jet printer, comprising:
2 a carriage for receiving and supporting at least one ink-jet pen;
driver electronics for the ink-jet pen; and
4 means for providing electrical connection between the pen and the driver electronics
once the pen has been fully inserted into the carriage including a flex cable in the carriage
6 having at least one extended portion including a conductive trace with a portion exposed and
positioned for contacting the pen when the pen is inserted into the carriage and shunting
8 electrostatic discharge (ESD) from the pen to ground before full insertion of the pen.

22. (New) The printer of Claim 21 wherein the extended portion is constructed
2 and configured so that the extended portion initially remains in a predetermined free floating
intercept orientation and will thereafter fold to a retracted orientation as the pen is
4 progressively inserted into the carriage.

23. (New) The printer of Claim 22 wherein the extended portion is constructed
2 and configured so that upon removal of the pen from the carriage the extended portion will
spring back to the predetermined free floating intercept orientation.

24. (New) The printer of Claim 21 wherein the exposed portion of the trace is
2 plated with a metal to ensure shunting of the ESD.

25. (New) The printer of Claim 21 wherein the extended portion is configured as
2 a generally C-shaped loop with an open region that surrounds a plurality of conductive
dimples on the flex cable.

26. (New) The printer of Claim 21 wherein the extended portion is secured to a
2 sidewall of the carriage and has an exposed conductive pad that makes electrical contact with
the pen upon insertion of the pen into the carriage.

27. (New) The printer of Claim 21 wherein the driver electronics are provided by
2 a printed circuit assembly (PCA) selected from the group consisting of a carriage PCA and
a main PCA.

28. (New) The printer of Claim 21 wherein the flex cable is made of a plastic film
2 substrate with conductive traces formed thereon.

29. (New) A printer, comprising:
4 a carriage for removably receiving and supporting at least one pen;
driver electronics for the pen; and
6 a flex cable that provides electrical connection between the pen and the driver
electronics once the pen has been operatively mounted in the carriage, the flex cable having
8 at least one extended portion for contacting the pen during insertion of the pen into the
carriage and shunting electrostatic discharge (ESD) from the pen to ground before the pen is
10 operatively mounted in the carriage, and the extended portion being configured as a generally
C-shaped loop with an open region that surrounds a plurality of conductive dimples on the
12 flex cable.

30. (New) The printer of Claim 29 wherein the carriage is configured to support
2 a pair of pens in side-by side relation and the flex cable in the carriage has a pair of extended
portions on opposite sides thereof for each contacting a corresponding one of the pens during
4 insertion into the carriage and shunting ESD to ground.

31. (New) The printer of Claim 29 wherein the extended portion is constructed and configured so that the extended portion initially remains in a predetermined free floating intercept orientation and will thereafter fold to a retracted orientation as the pen is progressively inserted into the carriage.

32. (New) The printer of Claim 31 wherein the extended portion is constructed and configured so that upon removal of the pen from the carriage the extended portion will spring back to the predetermined free floating intercept orientation.

33. (New) The printer of Claim 29 wherein the extended portion has a conductive trace with a portion exposed and positioned for contacting the pen when the pen is inserted into the carriage.

34. (New) The printer of Claim 33 wherein the exposed portion of the trace is plated with a metal to ensure shunting of the ESD.

35. (Currently Amended) The printer of Claim 29 wherein the extended portion is secured to a sidewall of the carriage and has an exposed conductive pad that makes electrical contact with the pen upon insertion of the pen into the carriage.

36. (New) The printer of Claim 29 wherein the driver electronics are carried fsby the carriage.